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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,271	09/18/2003	Jia-Hung Tsai	ACMP0121USA	2270

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NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)  
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MERRIFIELD, VA 22116

EXAMINER

DUDDING, ALFRED E

ART UNIT PAPER NUMBER

2853

DATE MAILED: 06/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/605,271

Applicant(s)

TSAI, JIA-HUNG

Examiner

Alfred E. Dudding

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 11-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                              |                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/18/03</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters “50, 52, 54, and 56” have been used to designate both a printing window, columns, and steps for a printing algorithm. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. Figure 7, reference character ‘106’, decision block, contains one entrance and three exits. This type of block has “yes’ or ‘no’ exits only.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torpey et al. (U.S. 6,361,144 B1).

Torpey et al. disclose a method of processing color image data for printing on a color ink jet printer, the method comprising: reading color image data from a source image, the source image containing color image data of at least a first color area and a second color area; identifying a border region between the first color area and the second color area; performing a pixel altering function to alter pixels of the source image along the border region between the first color area and the second color area; and printing the halftone images using ink of the first and second colors according to the first and second color areas, Column 1, lines 1 – 32. Torpey et al. teach the use of two different types of ink, black and color, Column 22, lines 16 – 19.

Torpey et al. fail to teach the claimed invention of converting the source image into a plurality of halftone images after performing the pixel altering function. Torpey et al. teach that one of the inks is black, and the other is cyan, magenta, or yellow, Figures 3 – 5.

Rylander discloses converting the source image into a plurality of halftone images after performing the pixel altering function, Abstract, lines 1 – 8.

It would have been obvious to one of ordinary skill in the art to use the halftoning method of Rylander in the color printing method of Torpey et al. in order to improve printout quality

5. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torpey et al. (U.S. 6,361,144 B1) in view of Gunther et al. (U.S. 6,705,702 B2).

Torpey et al. teach all of the limitations of the claimed invention except wherein the first color ink is a pigment based ink and the second color ink is a dye-based ink.

Gunther et al. disclose the use of a dye-based ink and a pigment based ink for printing, Column 8, lines 2 – 10.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the inks of Gunther et al. in the color printing method of Torpey et al. in order to improve image contrast and prevent bleeding.

6. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torpey et al. (U.S. 6,361,144 B1) in view of Torpey et al. (U.S. 6,290,330 B1).

Torpey et al. ('144 patent) teach all of the limitations of the claimed invention except replacing pixels of the first and second colors with pixels of another color.

Torpey et al. ('330 patent) disclose replacing pixels of the first and second colors with pixels of another color, Figure 3, elements 44, 46 (magenta and cyan replacing black). \

It would have been obvious to one of ordinary skill in the art at the time the invention was made too use the pixel substitution method of Torpey et al. ('330) in the color printing method of Torpey et al. ('144) in order to maintain black edge quality and thereby improve printouts.

7. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torpey et al. (U.S. 6,361,144 B1) in view of Barton et al. (U.S. 5,861,896 A)

Torpey et al. teach all of the limitations of the claimed invention except wherein the pixel altering function comprises reducing a color saturation value for pixels of the first and second colors.

Barton et al. disclose pixel altering function comprises reducing a color saturation value for pixels of any color, Column 10, lines 33 – 42.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the color saturation reduction method of Barton et al., in the color printing

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method of Torpey et al. in order to reduce color gamut discontinuities.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Torpey et al. (U.S. 6,361,144 B1) in view of Torpey et al. (U.S. 6,348,847 B1).

Torpey et al. ('144 patent) teach all of the limitations of the claimed invention except for disclose a method further comprising calculating a first density of pixels of the first color, a second density of pixels of the second color, and comparing the first density to the second density.

Torpey et al. ('144 patent) disclose a method further comprising calculating a first density of pixels of the first color, a second density of pixels of the second color, and comparing the first density to the second density, Column 21, lines 15 – 25.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the pixel density comparison of Torpey et al. ('847) in the color printing method of Torpey et al ('144) in order to improve color/black interfacing and thereby improve printout quality.

#### ***Allowable Subject Matter***

9. Claims 11 – 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

a. A search of prior art did not cite a 11. The method further comprising identifying the border region between the first color area and the second color area only if the first density and the second density match predetermined criteria which necessitates altering pixels along the

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border as claimed in the limitations of claims 11 – 13.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alfred Dudding whose telephone number is (571) 272-2144. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, AU 2853, can be reached at (571) 272 - 2149. The fax phone number for this Group is are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703) 308-0956.

Alfred Dudding

*AD*

6/16/04

  
Stephen D. Meier  
Primary Examiner